

Abstract of the disclosure

Isolation of the biosynthesis genes for pseudo-oligosaccharides from *Streptomyces glaucescens* GLA.O, and their use

The invention relates to a recombinant DNA molecule which comprises genes for biosynthesizing acarbose and homologous pseudo-oligosaccharides; to oligonucleotide primers for the PCR amplification of the molecule; to proteins which can be obtained by expressing the genes located on a molecule; to vectors and host cells which comprise the above-mentioned DNA molecule; to proteins which are encoded by the DNA molecule; to proteins which are expressed by means of said vectors in said host cells; to processes for preparing acarbose by introducing the characterized genes into appropriate host organisms and/or eliminating these genes from the host organisms; to processes for completing the gene cluster of genes for biosynthesizing acarbose, to processes for isolating analogous gene clusters in organisms other than *Streptomyces glaucescens* GLA.O, to processes for mutating promoters of endogenous acarbose biosynthesis genes for the purpose of increasing the yield of acarbose, to the use of *Streptomyces glaucescens* GLA.O for preparing acarbose and for preparing mutants of *Streptomyces glaucescens* GLA.O which are optimized with regard to the acarbose yield.